

AmendmentsI claim:

1-15. Canceled.

16. (Currently amended) The method of claim ~~[[15]]~~ 109 wherein said diene plant produces a compound selected from the group consisting of 1,3-butadiene and isoprene.

17. (Currently amended) The method of claim ~~[[15]]~~ 109 further comprising separating said solvent from said ~~dispersion~~blend.

18. (Currently amended) The method of claim 16 further comprising separating said solvent from said ~~dispersion~~blend.

19. (Currently amended) The method of claim ~~[[15]]~~ 109 wherein said N,N-disubstituted amide is an N,N-dialkyl amide comprising alkyl groups having from about 16 to about 22 carbon atoms.

20. (Original) The method of claim 16 wherein said N,N-disubstituted amide is an N,N-alkyl amide comprising alkyl groups having from about 16 to about 22 carbon atoms.

21. (Original) The method of claim 17 wherein said N,N-disubstituted amide is an N,N-dialkyl amide comprising alkyl groups having from about 16 to about 22 carbon atoms.

22. (Original) The method of claim 18 wherein said N,N-disubstituted amide is an N,N-dialkyl amide comprising alkyl groups having from about 16 to about 22 carbon atoms.

23. (Currently amended) The method of claim ~~[[15]]~~ 109 wherein said ~~fatty acid~~ N,N-disubstituted amide is amide of is a tall oil fatty acid.

24. (Currently amended) The method of claim 16 wherein said N,N-disubstituted

amide is ~~an~~ amide of ~~a~~-fatty acid.

25. (Currently amended) The method of claim 17 wherein said N,N-disubstituted amide is amide of ~~a~~-fatty acid.

26. (Currently amended) The method of claim 18 wherein said N,N-disubstituted amide is ~~an~~ amide of ~~a~~-fatty acid.

27. (Currently amended) The method of claim 19 wherein said N,N-disubstituted amide is ~~an~~ amide of ~~a~~-fatty acid.

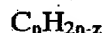
28. (Currently amended) The method of claim 20 wherein said N,N-disubstituted amide is ~~an~~ amide of ~~a~~-fatty acid.

29. (Canceled) .

30. (Currently amended) The method of claim ~~[[29]]~~ 110:

provided that,

when R¹ and R² are connected to form a cyclic amide, and said cyclic amide comprises a nitrogen heteroatom, R¹ and R² each contain 2 carbon atoms and said nitrogen heteroatom comprises a substituent selected from the group consisting of hydrogen, a hydroxyalkyl group having from about 1 to about 3 carbon atoms, and an alkyl group having from about 1 to about 6 carbon atoms; and, provided that when R¹ is selected from the group consisting of a hydrogen atom and alkenyl group, R² is



wherein, when n is an even number, R¹ or R² ~~comprises~~ has a quantity of carbon-carbon double bonds and said quantity increases from 1 to 2 to 3, to 4 to a maximum of

$n/2$, with z following a first progression 1, 3, 5, 7,.... to $n - 1$, depending of the number of alkene groups present; and

when n is an odd number and said quantity increases from 1 to 2 to 3, to 4 to a maximum of $(n-1)/2$, with z following a second progression, 1, 3, 5, 7,.... to $n-2$.

31. (Currently amended) The method of claim [[29]]110 wherein R^3 is selected from the group consisting of branched and unbranched alkyl and alkenyl groups having from about 16 to 22 carbon atoms.

32. (Original) The method of claim 30 wherein R^3 is selected from the group consisting of branched and unbranched alkyl and alkenyl groups having from about 16 to 22 carbon atoms.

33-34. (Canceled),

35. (Currently amended) The method of claim [[34]]112 further comprising separating said solvent from said blend.

36. (Original) The method of claim 35 wherein said solvent is an extractive distillation solvent.

37. (Original) The method of claim 36 wherein said solvent comprises acetonitrile.

38. (Currently amended) A method for preventing fouling of equipment during solvent recovery in a diene plant comprising treating a solvent recovery blend comprising a solvent and ~~said one or more~~ at least one fouling ~~agents~~ agent with N,N-dialkyl of a fatty acid in an amount of about 20 ppm or more.

39. (Original) The method of claim 38 wherein said amount is about 50 ppm or more.

40. (Original) The method of claim 38 further comprising separating said solvent

from said blend.

41.. (Currently amended) A method for ~~preventing~~inhibiting fouling of equipment during solvent recovery in a diene plant comprising treating a solvent recovery blend comprising a solvent and ~~said one or more~~at least one fouling agents~~agent~~ with an N,N-dialkyl amide of a tall oil fatty acid in an amount of about 20 ppm or more.

42. (Original) The method of claim 41 wherein said amount is about 50 ppm or more.

43. (Currently amended) A method for ~~preventing~~inhibiting fouling of equipment during solvent recovery in a diene plant comprising treating a solvent recovery blend comprising a solvent and ~~said one or more~~at least one fouling agents~~agent~~ with an N,N-dimethyl amide of fatty acid in an amount of about 20 ppm or more.

44. (Original) The method of claim 43 wherein said amount is about 50 ppm or more.

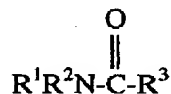
45. (Currently amended) The method of claim 43 wherein said fatty acid is a tall oil fatty acid.

46. (Currently amended) The method of claim 44 wherein said fatty acid is a tall oil fatty acid.

47. (Withdrawn). A stream comprising at least one fouling agent, at least one extractive distillation solvent, and an N,N-disubstituted amide in an amount effective to form a dispersion of said at least one fouling agent in said stream.

48. (Withdrawn). The stream of claim 47 wherein said N,N-disubstituted amide is an N,N-dialkylamide.

49. (Withdrawn). The stream of claim 47 wherein said N,N-disubstituted amide has the following general formula:



wherein:

R^1 and R^2 preferably are selected from the group consisting of hydrogen, methyl, ethyl, propyl, iso-propyl and butyl groups; and,

R^3 is selected from the group consisting of alkyl groups, alkenyl groups, and combinations thereof having from about 16 to about 22 carbon atoms.

50. (Withdrawn). The stream of claim 47 wherein said N,N-disubstituted amide is an N,N- dimethylamide of a fatty acid.

51. (Withdrawn). The stream of claim 47 wherein said fatty acid is a tall oil fatty acid.

52. (Withdrawn). The stream of claim 47 wherein said fatty acid is a tall oil fatty acid.

53. (Withdrawn). The stream of claim 49 wherein said fatty acid is a tall oil fatty acid.

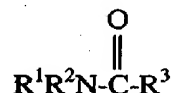
54. (Withdrawn). The stream of claim 49 wherein said fatty acid is a tall oil fatty acid.

55. (Withdrawn). A stream comprising at least one fouling agent, at least one extractive distillation solvent, and about 20 ppm or more of an N,N-disubstituted amide.

56. (Withdrawn). The stream of claim 55 wherein said N,N-disubstituted amide is an N,N-dialkylamide.

57. (Withdrawn). The stream of claim 55 wherein said N,N-disubstituted amide has

the following general formula:



wherein:

R^1 and R^2 preferably are selected from the group consisting of hydrogen, methyl, ethyl, propyl, iso-propyl and butyl groups; and,

R^3 is selected from the group consisting of alkyl groups, alkenyl groups, and combinations thereof having from about 16 to about 22 carbon atoms.

58. (Withdrawn). The stream of claim 55 wherein said N,N-disubstituted amide is an N,N- dimethylamide of a fatty acid.

59. (Withdrawn). The stream of claim 55 wherein said fatty acid is a tall oil fatty acid.

60. (Withdrawn). The stream of claim 56 wherein said fatty acid is a tall oil fatty acid.

61. (Withdrawn). The stream of claim 57 wherein said fatty acid is a tall oil fatty acid.

62. (Withdrawn). A stream comprising at least one fouling agent, at least one extractive distillation solvent, and about 20 ppm or more of an N,N-dimethyl amide of a tall oil fatty acid.

63. (Withdrawn). The stream of claim 59 wherein said extractive distillation solvent comprises acetonitrile.

64. (Withdrawn). The stream of claim 60 wherein said extractive distillation solvent

comprises acetonitrile.

65. (Withdrawn). The stream of claim 61 wherein said extractive distillation solvent comprises acetonitrile.

66. (Withdrawn). The stream of claim 62 wherein said extractive distillation solvent comprises acetonitrile.

67. (Canceled).

68. (Currently amended) The method of claim ~~[[67]]~~113:

provided that,

when R^1 is selected from the group consisting of a hydrogen atom and alkenyl group, R^2 is



wherein, when n is an even number, R^1 or R^2 comprises a quantity of carbon-carbon double bonds and said quantity increases from 1 to 2 to 3, to 4 to a maximum of $n/2$, with z following a first progression 1, 3, 5, 7,.... to $n-1$, depending of the number of alkene groups present; and

when n is an odd number and said quantity increases from 1 to 2 to 3, to 4 to a maximum of $(n-1)/2$, with z following a second progression, 1, 3, 5, 7,.... to $n-2$.

69. (Currently amended) The method of claim ~~[[67]]~~113 wherein R^3 is selected from the group consisting of branched and unbranched alkyl and alkenyl groups having from about 16 to 22 carbon atoms.

70. (Original) The method of claim 68 wherein R^3 is selected from the group consisting of branched and unbranched alkyl and alkenyl groups having from about 16 to 22

carbon atoms.

71. (Currently amended) The method of claim [[67]]1113 wherein R^1 and R^2 independently are selected from the group consisting of hydrogen atoms; hydroxyalkyl groups having from about 1 to about 3 carbon atoms; branched or unbranched alkyl groups and alkenyl groups having from about 1 to about 6 carbon atoms.

72. (Currently amended) The method of claim [[67]]1113 wherein R^1 and R^2 independently are selected from the group consisting of alkyl groups having from about 1 to about 4 carbon atoms.

73. (Original) The method of claim 68 wherein R^1 and R^2 independently are selected from the group consisting of hydrogen atoms; hydroxyalkyl groups having from about 1 to about 3 carbon atoms; branched or unbranched alkyl groups and alkenyl groups having from about 1 to about 6 carbon atoms.

74. (Original) The method of claim 68 wherein R^1 and R^2 independently are selected from the group consisting of alkyl groups having from about 1 to about 4 carbon atoms.

75. (Original) The method of claim 69 wherein R^1 and R^2 independently are selected from the group consisting of hydrogen atoms; hydroxyalkyl groups having from about 1 to about 3 carbon atoms; branched or unbranched alkyl groups and alkenyl groups having from about 1 to about 6 carbon atoms.

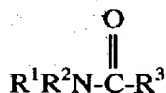
76. (Original) The method of claim 69 wherein R^1 and R^2 independently are selected from the group consisting of alkyl groups having from about 1 to about 4 carbon atoms.

77. (Original) The method of claim 70 wherein R^1 and R^2 independently are selected from the group consisting of hydrogen atoms; hydroxyalkyl groups having from about 1 to about

3 carbon atoms; branched or unbranched alkyl groups and alkenyl groups having from about 1 to about 6 carbon atoms.

78. (Original) The method of claim 70 wherein R^1 and R^2 independently are selected from the group consisting of alkyl groups having from about 1 to about 4 carbon atoms.

79. (New). A method for inhibiting fouling of equipment handling at least one fouling agent, said method comprising treating a non-aqueous blend comprising said fouling agent with N,N-disubstituted amide in an amount and under conditions effective to inhibit said fouling during operation of said equipment, wherein said N,N-disubstituted amide has the following general formula:



wherein:

R^1 and R^2 independently are selected from the group consisting of hydrogen atoms; hydroxyalkyl groups having from about 1 to about 3 carbon atoms; aryl groups; aralkyl groups; alkaryl groups; branched or unbranched alkyl groups (and alkenyl groups) having from about 1 to about 30 carbon atoms; cyclic groups having a total number of from about 4 to about 6 carbon atoms; and, cyclic groups wherein R^1 and R^2 are connected either directly or via a heteroatom to form a cyclic group having a total number of members of from about 5 to about 7, wherein said heteroatom is selected from the group consisting of nitrogen, oxygen, and sulfur; and

R^3 is selected from the group consisting of a combination of tall oil fatty acids

comprising rosin acid, aryl groups, alkaryl groups, and aralkyl groups.

80. (New) The method of claim 79:

provided that,

when R^1 and R^2 are connected to form a cyclic amide, and said cyclic amide comprises a nitrogen heteroatom, R^1 and R^2 each contain 2 carbon atoms and said nitrogen heteroatom comprises a substituent selected from the group consisting of hydrogen, a hydroxyalkyl group having from about 1 to about 3 carbon atoms, and an alkyl group having from about 1 to about 6 carbon atoms; and, provided that when R^1 is selected from the group consisting of hydrogen and alkenyl group, R^2 is



wherein, when n is an even number, R^1 or R^2 has a quantity of carbon-carbon double bonds and said quantity increases from 1 to 2 to 3, to 4 to a maximum of $n/2$, with z following a first progression 1, 3, 5, 7, . . . to $n-1$, depending on the number of alkene groups present; and, when n is an odd number and said quantity increases from 1 to 2 to 3, to 4 to a maximum of $(n-1)/2$, with z following second progression, 1, 3, 5, 7, to $n-2$.

81. (New) The method of claim 79 wherein R^3 is selected from the group consisting of branched and unbranched alkyl and alkenyl groups having from about 16 to 22 carbon atoms.

82. (New) The method of claim 80 wherein R^3 is selected from the group consisting of branched and unbranched alkyl and alkenyl groups having from about 16 to 22 carbon atoms.

83. (New) The method of claim 79 wherein R^1 and R^2 are selected from the group consisting of alkyl groups having from about 1 to about 6 carbon atoms.

84. (New) The method of claim 79 wherein R^1 and R^2 are selected from the group consisting of hydrogen, methyl, ethyl, propyl, iso-propyl and butyl groups.

85. (New) The method of claim 80 wherein R^1 and R^2 are selected from the group consisting of alkyl groups having from about 1 to about 6 carbon atoms.

86. (New) The method of claim 80 wherein R^1 and R^2 are selected from the group consisting of hydrogen, methyl, ethyl, propyl, iso-propyl and butyl groups.

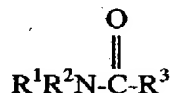
87. (New) The method of claim 81 wherein R^1 and R^2 are selected from the group consisting of alkyl groups having from about 1 to about 6 carbon atoms.

88. (New) The method of claim 81 wherein R^1 and R^2 are selected from the group consisting of hydrogen, methyl, ethyl, propyl, iso-propyl and butyl groups.

89. (New) The method of claim 82 wherein R^1 and R^2 are selected from the group consisting of alkyl groups having from about 1 to about 6 carbon atoms.

90. (New) The method of claim 82 wherein R^1 and R^2 are selected from the group consisting of hydrogen, methyl, ethyl, propyl, iso-propyl and butyl groups.

91. (New) A method for inhibiting fouling of equipment handling at least one fouling agent comprising treating a non-aqueous blend comprising said fouling agent with N,N-disubstituted amide in an amount and under conditions effective to inhibit said fouling, wherein said N,N-disubstituted amide has the following general formula:



wherein:

R^1 and R^2 independently are selected from the group consisting of hydrogen atoms;

hydroxyalkyl groups having from about 1 to about 3 carbon atoms; branched or unbranched alkyl groups and alkenyl groups having from about 1 to about 30 carbon atoms; and

R^3 is selected from the group consisting of a combination of tall oil fatty acids comprising rosin acid, aryl groups, alkaryl groups, and aralkyl groups.

92. (New) The method of claim 91:

provided that,

when R^1 is selected from the group consisting of hydrogen and alkenyl group, R^2 is



wherein, when n is an even number, R^1 or R^2 has a quantity of carbon-carbon

double bonds and said quantity increases from 1 to 2 to 3, to 4 to a

maximum of $n/2$, with z following a first progression 1, 3, 5, 7, . . . to n -

1, depending [[of]] on the number of alkene groups present; and,

when n is an odd number and said quantity increases from 1 to 2 to 3, to 4 to a

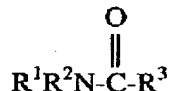
maximum of $(n-1)/2$, with z following second progression, 1, 3, 5, 7, to n -

2.

93. (New) The method of claim 91 wherein R^3 is selected from the group consisting of branched and unbranched alkyl and alkenyl groups having from about 16 to 22 carbon atoms.

94. (New) The method of claim 92 wherein R^3 is selected from the group consisting of branched and unbranched alkyl and alkenyl groups having from about 16 to 22 carbon atoms.

95. (New) The method of claim 91 wherein R^1 and R^2 are selected from the group consisting of alkyl groups having from about 1 to about 6 carbon atoms.
96. (New) The method of claim 91 wherein R^1 and R^2 are selected from the group consisting of hydrogen, methyl, ethyl, propyl, iso-propyl and butyl groups.
97. (New) The method of claim 92 wherein R^1 and R^2 are selected from the group consisting of alkyl groups having from about 1 to about 6 carbon atoms.
98. (New) The method of claim 92 wherein R^1 and R^2 are selected from the group consisting of hydrogen, methyl, ethyl, propyl, iso-propyl and butyl groups.
99. (New) The method of claim 93 wherein R^1 and R^2 are selected from the group consisting of alkyl groups having from about 1 to about 6 carbon atoms.
100. (New) The method of claim 93 wherein R^1 and R^2 are selected from the group consisting of hydrogen, methyl, ethyl, propyl, iso-propyl and butyl groups.
101. (New) The method of claim 94 wherein R^1 and R^2 are selected from the group consisting of alkyl groups having from about 1 to about 6 carbon atoms.
102. (New) The method of claim 94 wherein R^1 and R^2 are selected from the group consisting of hydrogen, methyl, ethyl, propyl, iso-propyl and butyl groups.
103. (New) A method for inhibiting fouling of equipment handling at least one fouling agent comprising treating a blend comprising said fouling agent with N,N-disubstituted amide in an amount and under conditions effective to inhibit said fouling, wherein said N,N-disubstituted amide has the following general formula:



wherein:

R^1 and R^2 independently are selected from the group consisting of hydrogen atoms;

hydroxyalkyl groups having from about 1 to about 3 carbon atoms; aryl groups; aralkyl groups; alkaryl groups; branched or unbranched alkyl groups and alkenyl groups having from about 1 to about 30 carbon atoms; cyclic groups having a total number of from about 4 to about 6 carbon atoms; and, cyclic groups wherein R^1 and R^2 are connected either directly or via a heteroatom to form a cyclic group having a total number of members of from about 5 to about 7, wherein said heteroatom is selected from the group consisting of nitrogen, oxygen, and sulfur; and

R^3 is a combination of fatty acid residues comprising rosin acid.

104. (New) The method of claim 103 wherein R^3 is selected from the group consisting of branched and unbranched alkyl and alkenyl groups having from about 16 to 22 carbon atoms.

105. (New) The method of claim 103 wherein R^1 and R^2 are selected from the group consisting of alkyl groups having from about 1 to about 6 carbon atoms.

106. (New) The method of claim 103 wherein R^1 and R^2 are selected from the group consisting of hydrogen, methyl, ethyl, propyl, iso-propyl and butyl groups.

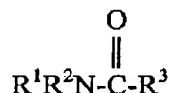
107. (New) The method of claim 104 wherein R^1 and R^2 are selected from the group consisting of alkyl groups having from about 1 to about 6 carbon atoms.

108. (New) The method of claim 104 wherein R^1 and R^2 are selected from the group consisting of hydrogen, methyl, ethyl, propyl, iso-propyl and butyl groups.

109. (New) A method for inhibiting fouling of equipment during solvent recovery in a

diene plant comprising treating a solvent recovery blend comprising at least one fouling agent with N,N-disubstituted amide in an amount and under conditions effective to inhibit said fouling.

110. (New) A method for inhibiting fouling of equipment during solvent recovery in a diene plant comprising treating a solvent recovery blend comprising at least one fouling agent with N,N-disubstituted amide in an amount and under conditions effective to inhibit said fouling, wherein said N,N-disubstituted amide has the following general formula:



wherein:

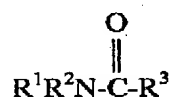
R¹ and R² independently are selected from the group consisting of hydrogen atoms;

hydroxyalkyl groups having from about 1 to about 3 carbon atoms; aryl groups, aralkyl groups, alkaryl groups, branched or unbranched alkyl groups and alkenyl groups having from about 1 to about 30 carbon atoms; cyclic groups having a total number of from about 4 to about 6 carbon atoms; and, cyclic groups wherein R¹ and R² are connected either directly or via a heteroatom to form a cyclic group having a total number of members of from about 5 to about 7, wherein said heteroatom is selected from the group consisting of nitrogen, oxygen, and sulfur;

R³ is selected from the group consisting of hydrogen, aryl groups, alkaryl groups, aralkyl groups, and branched or unbranched alkyl and alkenyl groups having from about 1 to 30 carbon atoms.

111. (New) A method for inhibiting fouling of equipment during solvent recovery in a

diene plant comprising treating a solvent recovery blend comprising at least one fouling agent with N,N-disubstituted amide in an amount and under conditions effective to inhibit said fouling, wherein said N,N-disubstituted amide has the following general formula:



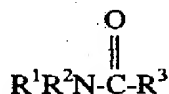
wherein:

R¹ and R² are selected from the group consisting of hydrogen, methyl, ethyl, propyl, isopropyl and butyl groups; and

R³ is selected from the group consisting of alkyl groups, alkenyl groups, and combinations thereof having from about 16 to about 22 carbon atoms.

112. (New) A method for inhibiting fouling of equipment during solvent recovery in a diene plant comprising treating a solvent recovery blend comprising solvent and at least one fouling agent with N,N-dimethyl amide of fatty acid in an amount and under conditions effective to inhibit said fouling.

113. (New) A method for inhibiting fouling of equipment during solvent recovery in a diene plant comprising treating a solvent recovery blend comprising at least one fouling agent with N,N-disubstituted amide in an amount and under conditions effective to inhibit said fouling, wherein said N,N-disubstituted amide has the following general formula:



wherein:

R¹ and R² independently are selected from the group consisting of hydrogen atoms;

hydroxyalkyl groups having from about 1 to about 3 carbon atoms; branched or unbranched alkyl groups and alkenyl groups having from about 1 to about 30 carbon atoms; and

R^3 is selected from the group consisting of hydrogen, aryl groups, aralkyl groups, alkaryl groups, and branched or unbranched alkyl groups and alkenyl groups having from about 1 to 30 carbon atoms.